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**Remarks**

Reconsideration of claims 44, 47, 48, 55-56, and 58, is respectfully requested.

In the Office action dated June 29, 2007, the Examiner objected to claim 44 and rejected the pending claims under 35 USC §§ 112, second paragraph, 102(b) and 103(a). The Examiner's objections and rejections will be addressed below in the order presented in the Office action.

**Objection to Claim 44**

The Examiner first objected to claim 44 with respect to the use of the acronym "SOI" without first spelling out the definition of the acronym. Applicant has amended claim 44, in the manner noted above, to overcome the Examiner's objection. It is believed that claim 44 is now in allowable form.

**35 USC § 112, first paragraph Rejection – Claims 44, 47, 48, 55, 56 and 58**

All pending claims were next rejected by the Examiner under 35 USC 112, first paragraph as failing to comply with the written description requirement. In particular, the Examiner cited the use of the term "co-simulating" in independent claim 44 as not having written support in the specification. In response, applicant has eliminated the "co" portion of this term, with the final step in independent claim 44 now defined as: "simulating both the electrical and optical behavior of said integrated optical/electronic circuit" (see paragraph [0436] for support). With this amendment, applicant believes that the Examiner's rejection has been overcome.

**35 USC § 102(b) Rejection – Claims 44, 55, 56 and 58**

The Examiner rejected the above-cited claims under 35 USC 102(b) as being anticipated by the article *Improving the Response of Optical Phase Modulators in SOI by Computer Simulation* by P. D. Hewitt et al. (hereinafter "Hewitt"). The Examiner cited Hewitt as disclosing "a method of operating a computer processor ... configured to

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simulate both the electrical characteristics and the optical characteristics of an SOI-integrated optical/electronic circuit", with reference to Hewitt at page 446 as "generating topology information and free-carrier concentration information" with respect to the "device characteristics for the modulator with rounded edges" and at page 445 as "simulating operation of at least certain optical circuits" with respect to estimating "the free-carrier concentration as a function of applied voltage" at page 445.

In response, applicant asserts that there is no discussion or suggestion in Hewitt with respect to providing a simulation of electronic circuit components. Hewitt is strictly limited to generating an analysis of an optical phase modulator, there is no description or discussion regarding the simulation of other, separate electronic components that would be used in association with an optical phase modulator. Inasmuch as Hewitt does not discuss or describe any associated electrical components, there is no teaching in Hewitt with respect to utilizing computer software that is configured to "simulate both the electrical characteristics and the optical characteristics of an integrated optical/electronic circuit", as defined by independent claim 44. The Hewitt reference, it is asserted, is limited in its teaching to generating a computer simulation of an optical phase modulator.

Based on the above, therefore, applicant believes that Hewitt cannot be found to "anticipate" the subject matter of independent claim 44, or claims 47, 48, 55, 56 and 58, which depend therefrom. Applicant thus respectfully requests the Examiner to reconsider this rejection and find these claims to be in condition for allowance.

***35 USC § 103(a) Rejection - Claims 47 and 48***

Claims 47 and 48 were next rejected by the Examiner under 35 USC 103(a) as being unpatentable over Hewitt (as applied to claim 44, above), in view of Applicant's Admitted Prior Art (AAPA). In this particular rejection, the Examiner cited paragraph [0437] as teaching that "the specific tools that are included in the EDA portion 8202 are a design choice. Any suitable one or more computer program or electronic simulation engine may be included ... and remain within the scope of the present invention". The Examiner then concluded that "it would have been obvious to a person of ordinary skill in the art to use Applicant's admission that software existed to perform the functions

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called out in the claimed limitations in order to enhance any software as a matter of design choice. Such a choice was available to Hewitt”.

As mentioned above, Hewitt is limited in its teaching to a modeling of an optical phase modulator – there was no need to use ‘electronic simulation engines’ in performing this modeling, since there were no associated electrical components. Therefore, applicant asserts that there is no motivation to include any teaching of electrical component simulation with the teaching of Hewitt. Applicant thus asserts that there is no teaching, suggestion or motivation to combine the teachings of the prior art with Hewitt.

***35 USC § 103(a) Rejection – Claims 44, 47, 48, 55, 56 and 58***

Lastly, the Examiner rejected all pending claims under AIPA (in particular, paragraph [0400]), stating that: “any specific combination of features as recited by claim 44 as Applicant’s state in pages 127-128 are a matter of the combination of admitted technologies that existed at the time of the invention and design choice”.

In response, applicant asserts that while electronic simulation design tools were known in the art, as well as purely optical design tools, the prior art was found to lack any methodology for simulating “hybrid” structures – i.e., “SOI-based integrated optical/electronic circuits” – which are the subject matter of the present invention. As discussed in the specification, the interplay between the two is significant. The Examiner is directed to paragraph [0439] of the specification, where it states: “The embodiment of FIG. 89 specifically ties the two ‘separate’ computational engines in which output from the EDA portion 8202 are fed into optical simulation design tool portion 8204 to predict optical behavior.” The prior art does not disclose or suggest the formation of any type of ‘hybrid’ device, nor any need to couple the workings of the electronic and optical engines to perform simulations.

Independent claim 44 is considered to encompass this aspect of the present invention. Applicant thus asserts that the subject matter of the present invention is fairly defined by independent claim 44 and the associated independent claims. Applicant thus

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respectfully requests the Examiner to reconsider this rejection and find the claims to be allowable over the AAPA.

Applicant believes that the case, in its present form, is now in condition for allowance and respectfully requests an early and favorable response from the Examiner in that regard. If for some reason or other the Examiner does not agree that the case is ready to issue and that an interview or telephone conversation would further the prosecution, the Examiner is invited to contact applicant's attorney at the telephone number listed below.

Respectfully submitted,

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